

## **Reducing Agriculture's Plastic Footprint: The Role of Biodegradable Plastics**

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Agricultural plastics are essential to modern farming, improving resource efficiency, crop protection, and yield stability. However, plastic residues and microplastics accumulate in agricultural soils, creating potential risks for soil health, ecosystem functioning, and food production. The challenge is therefore not whether agriculture needs plastics, but how they can be used more sustainably.

The cross-border EU Interreg AgriRePlas project develops practical pathways to reduce the plastic footprint of agriculture across the Upper Rhine region. Through plastic footprint assessments, material flow analyses, stakeholder engagement, and field trials, the project identifies potential loss pathways and evaluates opportunities for reduction, reuse, recycling, and substitution. Particular focus is placed on high-risk-of-loss applications, where biodegradable materials may offer the only realistic solution to prevent long-term accumulation of persistent plastics.

The presentation highlights project approaches, co-creation processes involving researchers, producers, and practitioners, and emerging solutions for more sustainable plastic use. It will discuss how collaborative innovation can support the development, testing, and adoption of practical alternatives. Particular attention will be given to implementation hurdles, including technical performance, economic feasibility, user acceptance, and collection and recycling infrastructure. The presentation will also examine the trade-offs between functionality, durability, operational safety, and environmental biodegradability, drawing on insights from regional European agricultural and forestry systems, and a contrasting marine case study from the tropical tuna fishery sector.



HYDRA Marine Sciences is a leading institution for environmental research, documentation & consulting, offering laboratory, mesocosm, and field-scale testing of biodegradable polymers in soil, freshwater, and marine environments for both research and certification purposes.